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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,007	04/12/2004	Hideaki Shimoda	251774US2	1570
22850	7590	07/14/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			GLENN, KIMBERLY E	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 07/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

A

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/822,007	SHIMODA, HIDEAKI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kimberly E. Glenn	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 April 2006.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7,9,10,12-14 and 16-19 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-7,9,10,12-14 and 16-19 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

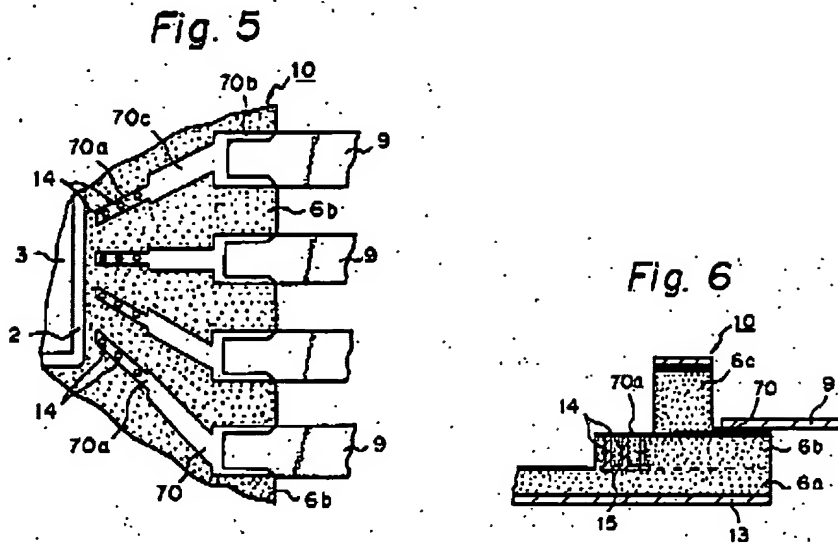
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 12, 13, 18, and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Shirasaki US Patent 6,726,488 (of record) in view of Miyagawa et al US Patent 4,890,155.

The primary reference Shirasaki disclose in figure 1 and 2, a high frequency wiring board comprising of a first line conductor 3 having a width of an edge portion 3b thereof being less than a width of another portion thereof; and a second line conductor 4 different from the first line conductor 3, which is connected to the edge portion of the first line conductor. The first and second line conductor disposed in different layers of a dielectric substrate 2 respectively. The edge portion 3b the first line conductor is arranged to overlap with the second line conductor; and a through conductor 5 is provided to connect said edge portion of said first line conductor to said edge portion of said second line conductor. (Column 5; line 7 through column 6; line 56) Figure 3 shows a conductor 8 for shortening the distance between the ground conductor 6 and the first and second line conductors (3 and 4). (Column 6 line 57-column 7, line 63)

Miyagawa et al disclose in figures 5 and 6, a package comprising a conductive passage 70 having an inner lead section 70a, which have a width smaller than the width of the conductive passage section 70c. The inner lead section contains a plurality of conductive vias, which are used to connect the conductive passage 70 to horizontal metallic layer 15.



One of ordinary skill in the art at the time of the invention would have found it to obvious to replace the single through hole 5 of Shirasaki with the plurality of vias 14 and to extend the end portion of the first and second line conductors as taught by Miyagawa et al.

The motivation for this modification, even though not explicitly stated in the Miyagawa et al, one of ordinary skill in the would have known that the addition of a plurality of vias would increase the reliability of the electrical connection.

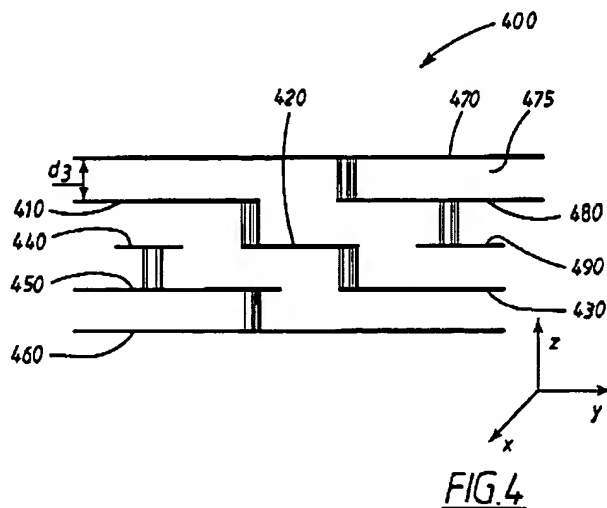
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 5, 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harju et al US Patent 6,522,214 (Of record).

Harju et al disclose in figure 4, a transmission line arrangement comprising a first conductor section 410 in a layer of a dielectric substrate 475; a second conductor section 430 in a different layer of a dielectric substrate; a third conductor section 420 provided in a layer between said first conductor section and said second conductor section wherein one edge of said third conductor section 420 is overlapped with said first conductor section 410 and another edge thereof is overlapped with the second conductor section 430, a first connection conductor for connecting said first conductor section 410 to the one edge of said third conductor section 420 and a second connection conductor for connecting said second conductor section 430 to the another edge of said third conductor section 420. Harju et al further disclose a conductor 450 for shortening a distance between said first conductor section and a ground conductor 460. (Column 7; line 8 through column 9; line 3)



Thus, Harju et al is shown to teach all the limitation of the claims with the exception of the width of the third signal line being set to be between the width of the first signal line and second signal line.

One of ordinary skill in the art would have found it obvious to set the width of the third signal line to be between the width of the first and second signal lines, since such modification would involve a mere change in the size of a component. A change in sized is generally recognized as being within the level of ordinary skill in the art.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harju et al US Patent 6,522,214 in view of Shirasaki US Patent 6,726,488. (Both of record)

The above 35 USC 103(a) rejection discussed the Harju et al reference. .

Thus, Harju et al is shown to teach all the limitation of the claims with the exception the edge portion of the first signal line connected to the first connection conductor have a line width different from a line width of another portion thereof, the edge portion of the first signal line connected to the first connection conductor have a line width different from a line width of another portion thereof, the width of the third signal line is set between the first signal line and the second signal line.

Shirasaki disclose in column 3 lines 48-55 that the conductor width of the one end of the line conductor, that is, the width W2 is made to be narrower than the width W1 of the line portion having a predetermined characteristic impedance, whereby it is possible to decrease a stray capacity at the connection of the one end of the line conductor and the through conductor, and it is possible to match characteristic impedance of the connection of the line conductor and the through conductor.

Therefore, one of ordinary skill in the art would have found to obvious to for the edge portion of the first conductor section (second conductor section) connected to the first through conductor (second through conductor) have a line a width different from a line width of another portion and the width of the third conductor section being set between the first and second conductor sections.

The motivation for these modification would have been to control the impedance between the first, second and third conductor section.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harju et al US Patent 6,522,214 (of record) in view of Miyagawa et al US Patent 4,890,155.

The above 35 USC 103(a) rejection discussed the Harju et al reference.



This Harju et al is shown to teach all the limitation of the claims with the exception of including a plurality of first and second connection conductors.

Miyagawa et al disclose in figures 5 and 6, a package comprising a conductive passage 70 having an inner lead section 70a, which have a width smaller than the width of the conductive passage section 70c. The inner lead section contains a plurality of conductive vias, which are used to connect the conductive passage 70 to horizontal metallic layer 15.

One of ordinary skill in the art at the time of the invention would have found it to obvious to replace connections of Harju et al with the plurality of vias 14 as taught by Miyagawa et al.

The motivation for this modification, even though not explicitly stated in the Miyagawa et al, one of ordinary skill in the would have known that the addition of a plurality of vias would increase the reliability of the electrical connection.

### ***Response to Arguments***

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Allowable Subject Matter***

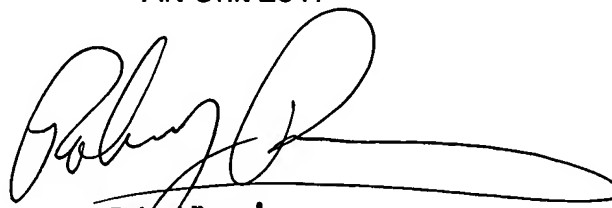
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly E. Glenn whose telephone number is (571)-272-1761. The examiner can normally be reached on Monday-Friday 7:30 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kimberly E Glenn  
Examiner  
Art Unit 2817

keg



Robert Pascal  
Supervisory Patent Examiner  
Technology Center 2800